

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 1-29. (Canceled)

1 1-52. (Canceled)

1 53. (Currently Amended) A printer configured for rendering data in an XML
2 document according to a formatting template, the formatting template comprising an XML
3 Descriptor (XMD) associated with each XML data element in a tree structure of the XML
4 document, wherein each of ~~the~~ XML Descriptors (XMDs) are identified by an associated
5 qualified tag, ~~each of the qualified tags~~ tag includes a concatenation of a plurality of XML
6 start tags representing start tags hierarchically traversed in the tree structure of the XML
7 document to reach the XML data element associated therewith, the XMDs providing
8 formatting to content associated with the XML data element; the printer further configured
9 for printing the rendered XML document according to the template using the XMDs.

1 54. (Currently Amended) The printer of claim 53, wherein the ~~data map~~
2 formatting template comprises a chain of XML descriptors for formatting attributes of XML
3 data elements.

1 55. (Currently Amended) The printer of claim 53, wherein an XML data element
2 that does not have a matching qualified tag is skipped and a next XML descriptor having a
3 qualified tag is used in formatting ~~the~~ an associated XML data element.

1 56. (Currently Amended) A printing system, comprising:
2 a spooler for receiving printable information from ~~the~~ a print channel;
3 a print services facility for parsing an XML file; and
4 a printer for printing ~~the~~ a print steam according to ~~the~~ a formatting defined by ~~the~~ a
5 formatting template;
6 wherein the formatting template includes an XML Descriptor (XMD)
7 associated with each XML data element in a tree structure of ~~the~~ an XML document, wherein
8 each of ~~the~~ XML Descriptors (XMDs) are identified by an associated qualified tag, ~~each of~~
9 the qualified ~~tags~~ tag includes a concatenation of a plurality of XML start tags representing
10 start tags hierarchically traversed in the tree structure of the XML document to reach the
11 XML data element associated therewith, the XMDs providing formatting to content
12 associated with the XML data element for printing by the printer using the XMDs.

1 57. (Currently Amended) The ~~formatting template~~ printing system of claim 56,
2 wherein the ~~data-map~~ formatting template comprises a chain of XML descriptors for
3 formatting attributes of XML data elements.

1 58. (Currently Amended) The ~~formatting template~~ printing system of claim 56,
2 wherein the ~~parser~~ print services facility skips an XML data element that does not have a
3 matching qualified tag and uses a next XML descriptor having [a] a qualified tag to format
4 the an associated XML data.

1 59. (Currently Amended) The ~~formatting template~~ printing system of claim 56
2 further comprising a buffer for storing start tags in order as the XML file is parsed.

1 60. (Currently Amended) A method for printing XML documents directly using a
2 formatting template, comprising:

3 placing an XML document to be printed on a server spool;

4 parsing the XML document to identify start tags hierarchically traversed in ~~the~~ a tree
5 structure of the XML document to reach an XML data element;

6 searching a formatting template comprising XML Descriptors (XMDs) identified by
7 an associated qualified tag having a concatenation of a plurality of XML start tags
8 hierarchically traversed in the tree structure of the XML document to reach the XML data
9 element associated therewith until a qualified tag associated with an XML Descriptor (XMD)
10 matches the identified start tags hierarchically traversed in the tree structure of the XML
11 document to reach the XML data element;

12 formatting the XML data element according to the XMD associated with the qualified
13 tag having a concatenation of a plurality of XML start tags matching the identified start tags
14 hierarchically traversed in the tree structure of the XML document to reach the XML data
15 element;

16 merging the XML data element associated with the XMD associated with the
17 qualified tag having a concatenation of a plurality of XML start tags matching the identified
18 start tags hierarchically traversed in the tree structure of the XML document to reach the
19 XML data element to produce a formatted print data stream; and

20 printing the XML document using the produced print data stream formatted according
21 to the XMDs associated with the XML data elements in the tree structure of the XML
22 document.

- 1 61. (Currently Amended) The method of claim 60 further comprising skipping an
2 XML data element that does not have a matching qualified tag and using a next XML
3 descriptor having a qualified tag to format ~~the~~ an associated XML data element associated
4 therewith.

1 62. (Currently Amended) An article of manufacture comprising a program
2 storage medium readable by a computer, the medium tangibly embodying one or more
3 programs of instructions executable by the computer to perform a method for printing XML
4 files directly using a formatting template, the method comprising:
5 placing an XML document to be printed on a server spool;
6 parsing the XML document to identify start tags hierarchically traversed in ~~the~~ a tree
7 structure of the XML document to reach an XML data element;
8 searching a formatting template comprising XML Descriptors (XMDs) identified by
9 an associated qualified tag having a concatenation of a plurality of XML start tags
10 hierarchically traversed in the tree structure of the XML document to reach the XML data
11 element associated therewith until a qualified tag associated with an XML Descriptor (XMD)
12 matches ~~the~~ identified start tags hierarchically traversed in the tree structure of the XML
13 document to reach the XML data element;
14 formatting the XML data element according the XMD associated with the qualified
15 tag having a concatenation of a plurality of XML start tags matching the identified start tags
16 hierarchically traversed in the tree structure of the XML document to reach the XML data
17 element;
18 merging the XML data element associated with the XMD associated with the
19 qualified tag having a concatenation of a plurality of XML start tags matching the identified
20 start tags hierarchically traversed in the tree structure of the XML document to reach the
21 XML data element to produce a formatted print data stream; and

22 printing the XML document using the produced print data stream formatted according
23 to the XMDs associated with the XML data ~~elements~~ element in the tree structure of the
24 XML document.

1 63. (Currently Amended) The article of manufacture of claim [[41]] 62 further
2 comprising skipping an XML data element that does not have a matching qualified tag and
3 using a next XML descriptor having a qualified tag to format ~~the~~ an associated XML data
4 element associated therewith.